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Images in Hematology

Multiple Myeloma in the Breast

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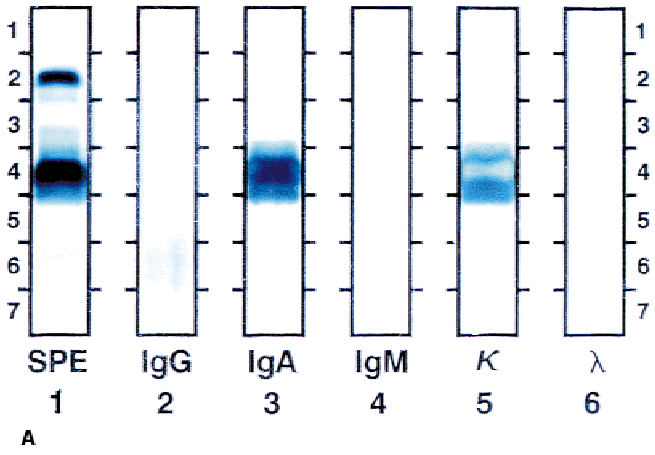
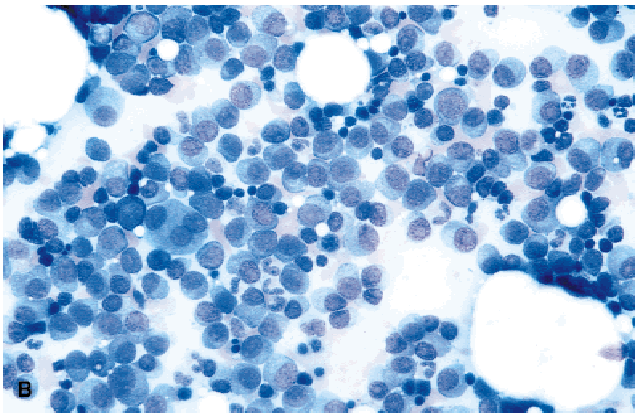
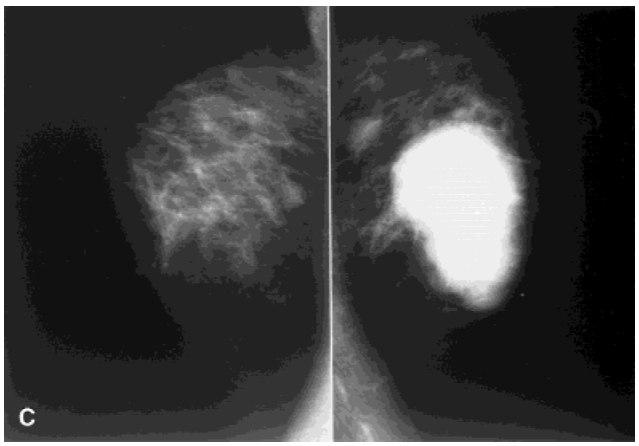
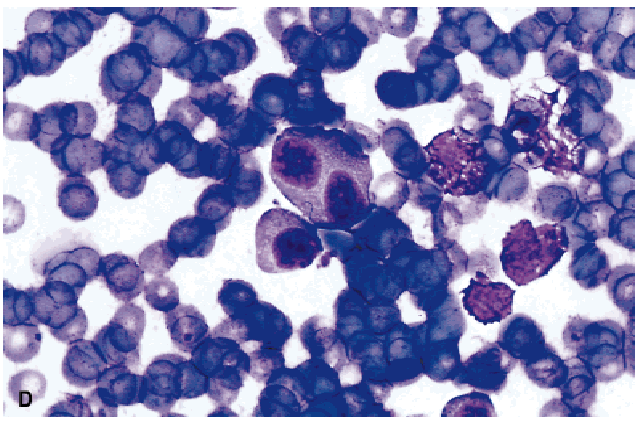
A 58-year-old white woman with a long history of myasthenia gravis was referred for the evaluation of progressive anemia. Her initial evaluation revealed a normocytic anemia (Hgb 5 g/dl) and a strikingly increased total protein level (10 g/dl). A subsequent workup for multiple myeloma was initiated.

The specific components of this workup and the results of this evaluation included:









- A serum protein electrophoresis which revealed a monoclonal paraprotein with a concentration in excess of 5000 mg/dl.
- A serum immunofixation which typed the paraprotein as IgA-kappa (Image A).
- A markedly elevated β_2 microglobulin level.
- A bone marrow aspiration and biopsy that demonstrated sheets of atypical plasma cells with occasional binucleate forms (Image B).

The patient was begun on pulse therapy with alkeran and prednisone, to which she had a partial response with a modest decrease in her IgA paraprotein. However, 6 months later, she developed a large, firm, mobile, easily palpable mass in the left breast located at the 12 o'clock position. A mediolateral oblique mammographic view of this breast revealed the large, lobulated mass to measure $7 \times 7 \times 9$ cm and to have some well-defined and some more ill-defined borders (Image C, right panel). In addition to this single, dominant mass lesion, multiple smaller masses were noted in both breasts. Ultrasonography was then performed, which demonstrated the mass itself to be solid with poorly defined margins. A simultaneous color Doppler study revealed excessive blood flow to the mass lesion. A fine-needle aspiration biopsy of the mass in the left breast was then performed. The cytology on this specimen, which showed atypical plasma cells, including binucleate forms (Image D), was felt to be diagnostic of an extramedullary plasmacytoma.

Because of her apparent disease progression, the patient's chemotherapy regimen was changed from alkeran and prednisone to vincristine, adriamycin, and dexamethasone (VAD). In addition, local radiotherapy to the breast mass was initiated. Unfortunately, despite this more aggressive regimen, the patient's disease continued to progress, and she died a couple of months later.

We have described the case of a soft-tissue plasmacytoma involving the breast, a very unusual manifestation of multiple myeloma.